

ABSTRACT

An optical head is provided for a free space optical communications system. The optical head is utilized for transmitting and receiving modulated infrared laser beams. The optical head includes an optical amplifier, a circulator, an ultrafine-steering element, a fine-steering element, a course-steering element, and a fine track sensor. Additionally, a method is provided for facilitating airborne free space optical communications between an airborne host platform and a link platform. Each platform has an optical head which transmits and receives data via modulated infrared laser beams, wherein the host includes at least an optical head having a fine, coarse, and ultrafine steering element configured in a cascaded three-tier steering element architecture.